AMENDMENTS TO THE SPECIFICATION:

Please replace the paragraph beginning at page 4, line 5, with the following amended paragraph:

-- All transmitting elements 10 are in direct electrical contact with one another outside interlaid transducer array 2. In addition, transmitting elements 10 are connected to an oscillator [[26]] to enable emission of in-phase ultrasonic waves.--.

Please replace the paragraph beginning at page 4, line 16, with the following amended paragraph:

-- Individual ultrasonic waves 27 interfering to form wave fronts 28 are, in first approximation, flat and therefore propagate transversely to flow direction 14 of the medium. Propagating common wave fronts 28 strike an opposite wall of a flow tube [[17]] 24, which has a radius of curvature 19. Radius of curvature 19 is preferably equal to twice the tube diameter [[20]] 18 of flow tube [[17]] 24 (r=2d). Due to curvature 23 of reflection surface 13, propagating wave fronts 28 are collimated to a linear focus 29 at the location of interlaid transducer array 2. Position 30 of linear focus [[29]] is a linear function of the velocity of the medium flowing in flow direction 14. Due to the linear relationship between the flow velocity of the flowing medium and position 30 of linear focus [[29]], the volumetric flow rate of the flowing medium passing by interlaid transducer array 2 may be inferred. Since usually no ideal linear focus [[29]] is established, the receiving element having the highest received intensity of the ultrasound signal is ascertained. FIG. 1 shows a first linear focus [[29]] 29.1 at point X.sub.0, which is established without a flowing medium. First linear focus 29.1 is shifted along the X axis to the point denoted by reference numeral 29.2 (see position x.sub.1 on the X axis). The deflection of the linear focus from position 29.1 to 29.2 is caused by the deflection due to the medium flowing in flow direction 14. Reference numeral 28 denotes the interfering wave fronts propagating in the direction of a curved reflection surface 13.--.

Please replace the paragraph beginning at page 5, line 21, with the following amended paragraph:

-- An auxiliary circle 17 has a diameter 20 and a radius 19, the radius 19 being approximately twice the diameter 18 of flow tube 24. Auxiliary circle 17 is used for indicating the curvature of curved reflection surface 13. FIG. 2 shows differing wave fronts 28 emitted by interlaid transducer array 2 and moving toward curved reflection surface 13 formed in curvature

23, and wave fronts 28 reflected by the reflection surface to the receiving elements of interlaid transducer array 2.--.

Please replace the paragraph beginning at page 6, line 9, with the following amended paragraph:

-- This makes forming a curvature in reflection surface 13 for beam collimation unnecessary if the individual transducer elements of the ultrasonic flow sensor are excited with a phase delay in such a way that the path difference between the individual ultrasonic waves 27 results in a curved or flat wave front 28 (see FIGS. 5 and 6). If these wave fronts 28 have a radius of curvature which is twice the tube diameter immediately after their emission, the waves converge after reflection on the opposite wall into a linear focus [[29]] at the point of interlaid transducer array 2.--.

Please delete the section captioned "List of Reference Numerals" beginning at page 8 and replace such deleted section with the following replacement section:

-- List of Reference Numerals

1	ultrasonic flow sensor
2	interlaid transducer array
3	separating trench
4	transducer element
5	strip-shaped electrode
6	PVDF film
7	flat counterelectrode
8	top
9	bottom
10	transmitting element
11	silicon substrate
12	epoxy resin protective layer
13	reflection surface
14	flow direction
15	transmitted signal
16	received signal
17	auxiliary circle
18	array-reflection surface distance (d)

19 radius of curvature, reflection surface

20 ~~tube diameter~~ auxiliary circle diameter

21 tube constriction

22 curvature, reflection surface

23 curvature

24 flow pipe

25 d_1 (distance in flow constriction)

[[26]]

27 individual ultrasonic wave

28 interfering wave fronts (curved or parallel)

29.1 first linear focus (without flow)

29.2 second linear focus (with flow)

30 position of linear focus

31 comparator

32 sample-and-hold amplifier

[[33]]

34 signal multiplexer

35 multiplexer control

36 analog signal processing--.